

IN THE SPECIFICATION

Please replace paragraph [0003] with the following amended paragraph:

[0003] Shielding may be reduced considerably by decoupling the friction ring from the brake disk-~~chamber hub~~. DE 199 31 140 A1, for example, describes the manufacture of a composite cast brake disk made of a-~~chamber hub~~ and a friction ring. A-~~chamber hub~~ is provided in this case with radial retaining bolts and is placed into a casting mold. A casting is then made around the-~~chamber hub~~ in the region of the retaining bolts, and the friction ring is formed. Although in this brake disk there is a separation between-~~chamber hub~~ and friction ring, the radial expansion is limited by the rigid retaining bolts.

Please replace paragraph [0004] with the following amended paragraph:

[0004] DE 195 05 112 A1 describes a method for composite casting for a brake disk. A tooth-shaped metal band is inserted between the-~~chamber hub~~ and friction ring, and a casting is made around the metal band, which is then exposed again. Since the metal band does not bond with the casting, the-~~chamber hub~~ and the friction ring are decoupled after the band is exposed. The disadvantage here is the complicated procedure, and a tight axial fit is difficult to ensure.

Please replace paragraph [0008] with the following amended paragraph:

[0008] The casting core is placed in a casting mold which is filled with liquid metal, preferably a ferrous metal, in the conventional manner. After solidifying, the core is removed and the bodies remain at least partly cast in as joining elements between a friction ring and a brake disk ~~chamber hub~~.

Please replace paragraph [0009] with the following amended paragraph:

[0009] The brake disk-~~chamber hub~~ and the friction ring are decoupled by the use of the method according to the present invention, whereby shielding is reduced, and they may be manufactured and/or joined via composite casting in a single operation, which considerably reduces production costs. As a rule, no additional joining agent is needed.

Please replace paragraph [0010] with the following amended paragraph:

[0010] In principle, a pre-manufactured single component, such as the brake disk, the brake disk-~~chamber~~ hub, or the friction ring, may be placed in the casting mold and joined during casting via the bodies inserted into one another. One particular advantage of the method is that the brake disk-~~chamber~~ hub and the friction ring are cast and joined in a single casting operation.

Please replace paragraph [0011] with the following amended paragraph:

[0011] The core and the casting mold are shaped such that they are filled together preferably via a gate. After solidifying, a bridge is thus formed between the brake disk-~~chamber~~ hub and friction ring, which is later removed preferably via a machining operation. A particularly homogeneous and low-shrinkage joint may be achieved using this filling method.

Please replace paragraph [0012] with the following amended paragraph:

[0012] In another embodiment of the method according to the present invention, it is also possible to feed the brake disk-~~chamber~~ hub and the friction ring separately through a branched gate. No bridge requiring subsequent removal is needed in this case; however, the casting procedure is slightly more complex.

Please replace paragraph [0014] with the following amended paragraph:

[0014] The present invention further provides a brake disk characterized by the fact that a brake disk-~~chamber~~ hub and a friction ring are joined by two or more pairs of bodies inserted into one another and axially movable with respect to one another. The brake disk-~~chamber~~ hub is joined to one of the two bodies inserted into one another, and the friction ring is joined to the other body. Since the two bodies are axially movable with respect to one another, the brake disk ~~chamber~~ hub and the friction ring may also radially expand with respect to one another. This considerably reduces shielding between the brake disk-~~chamber~~ hub and friction ring. The resulting advantages are lower brake noise, the reduction of brake-pad wear, and the reduction of microcracks in the friction ring caused by shielding. In particular, the reduction in microcracks results in a longer service life of the brake disk.

Please replace paragraph [0015] with the following amended paragraph:

[0015] The bodies inserted into one another are preferably cast between the brake disk ~~chamber~~ hub and the friction ring. The two components are thus firmly joined.

Please replace paragraph [0023] with the following amended paragraph:

[0023] The core is placed in a casting mold; the brake disk is cast using a method known per se. The metal is cast from a bottom of a friction ring area; the melt flows upward via bridge channels, which form bridges 12 in the cast brake disk, to a ~~chamber~~ hub area. The cast brake disk is then cooled down in a controlled manner.

Please replace paragraph [0024] with the following amended paragraph:

[0024] Figure 1 shows a cross section of an unfinished brake disk 2 after casting, core 14 being still enclosed by brake disk 2. Brake disk 2 has a brake disk ~~chamber~~ hub (~~chamber~~ hub) 4 and a friction ring 6. ~~Chamber~~ Hub 4 and friction ring 6 are joined via bridges 12 in this state.

Please replace paragraph [0026] with the following amended paragraph:

[0026] In a subsequent operation, core 14 is removed and bridges 12 are wrung off. Figure 2 shows finished brake disk 2 from Figure 1. ~~Chamber~~ Hub 4 is now joined to the friction ring only via bushings 8 and 10. Bushings 8 and 10 are axially movable with respect to one another, which allows for radial expansion with respect to ~~chamber~~ hub 4 and friction ring 6 in the direction of the arrow (Figure 2). When ~~chamber~~ hub 4 and friction ring 6 move radially, a gap 24 is used for equalization and for removing the cooling air conducted by friction ring 6. Open cavities 19 in the center of friction ring 6 form an internal ventilation of brake disk 2.

Please replace paragraph [0027] with the following amended paragraph:

[0027] Figure 3 shows a section along line II in Figure 2. Embodiments for webs 20 or nubs 22 which form cavities 19 of the internal ventilation are shown here as examples. The view of Figure 2 shows casting 16, via which bushing 8 is cast into friction ring 6. Torque is transmitted from friction ring 6 to ~~chamber~~ hub 4 via cast stud 18.

Please replace paragraph [0028] with the following amended paragraph:

[0028] In another embodiment of the present invention according to Figure 4, the bodies inserted into one another have the form of an external bushing 8 and an internal bolt 26. Bolt 26 is cast in the area of ~~chamber~~ hub 4. Torque is transmitted via bolt 26 as it is via cast stud 18 of Figure 3.

Please replace paragraph [0030] with the following amended paragraph:

[0030] The term brake disk ~~chamber~~ hub is normally used for a retaining part which is used for joining the brake disk to a vehicle.

Please replace paragraph [0032] with the following amended paragraph:

[0032] The bridges illustrated in Figure 2 run on an upper and a lower friction ring side, for example. They may be have a circumferential or interrupted design and basically may be situated at any contact point of ~~chamber~~ hub 4 and friction ring 6.

Please replace paragraph [0033] with the following amended paragraph:

[0033] Figures 1 through 4 show the arrangement of bodies (8, 10, 26) inserted into one another in such a way that they are essentially situated in the area of the friction ring. In an embodiment which is not illustrated, an outer body of the bodies inserted into one another is surrounded by a cast ~~chamber~~ hub and a joint similar to cast stud 18 in Figure 3 extends from a friction ring to the ~~chamber~~ hub and is joined there to an inner body of the bodies inserted into one another. A joint similar to bolts 26 in Figure 4 of the friction ring to the ~~chamber~~ hub is also expedient, the bolt being surrounded by the cast friction ring and being movably mounted in the bushing cast into the ~~chamber~~ hub.